

**Final Statement of Reasons  
for Rulemaking**

**PUBLIC HEARING TO CONSIDER THE ADOPTION OF  
AMENDMENTS  
TO THE CALIFORNIA REGULATIONS FOR  
REDUCING VOLATILE ORGANIC COMPOUND  
EMISSIONS FROM  
ANTIPERSPIRANTS AND DEODORANTS,  
CONSUMER PRODUCTS, AND  
AEROSOL COATINGS**

Scheduled for Consideration: September 28, 1995  
Agenda Item No.: 95-9-3

California Environmental Protection Agency



**Air Resources Board**

State of California

AIR RESOURCES BOARD

Final Statement of Reasons for Rulemaking,  
Including Summary of Comments and Agency Responses

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OF  
AMENDMENTS TO THE CALIFORNIA  
REGULATIONS FOR REDUCING VOLATILE ORGANIC COMPOUND EMISSIONS  
FROM  
ANTIPERSPIRANTS AND DEODORANTS,  
CONSUMER PRODUCTS,  
AND  
AEROSOL COATING PRODUCTS\*

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\* The Air Resources Board adopted the Regulation for Reducing Volatile Organic Compound Emissions from Aerosol Coating Products (Article 3, Aerosol Coating Products, sections 94520-94528, Title 17, California Code of Regulations), at a public hearing held on March 23, 1995. The Aerosol Coatings Regulation has been submitted to the Office of Administrative Law and is pending approval.

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I. INTRODUCTION

On September 28, 1995, the Air Resources Board (ARB) conducted a public hearing to consider amendments to the following three regulations: the Regulation for Reducing Volatile Organic Compound (VOC) Emissions from Antiperspirants and Deodorants (the "antiperspirant and deodorant regulation"; Title 17, California Code of Regulations (CCR), sections 94500-94506.5), the Regulation for Reducing VOC Emissions from Consumer Products (the "consumer products regulation"; Title 17, CCR, sections 94507-94517), and the Regulation for Reducing VOC Emissions from Aerosol Coating Products (the "aerosol coatings regulation"; Title 17, CCR, sections 94520-94528). These three regulations are often referred to collectively as the "consumer products regulations."

At the hearing, the Board adopted Resolution 95-41, in which the Board approved amendments to these three regulations. The approved amendments included modifications to the text that was originally proposed by the staff in the hearing notice dated August 1, 1995. Text was modified from staff's original proposal in sections 94501 of the antiperspirant and deodorant regulation, 94508(a)(90) of the consumer products regulation, and 94521(a)(62) of the aerosol coatings regulation. These changes were based on modifications proposed by staff at the September 28, 1995 Board hearing. The "Notice of Public Availability of Modified Text and Availability of Additional Documents" together with a copy of the full text of the amended provisions of the regulations, with the modifications clearly indicated, was mailed on October 6, 1995 to each of the individuals described in subsections (a)(1) through (4) of section 44, Title 1, CCR. Therefore, the modified regulations were made available to the public for a 15-day comment period from October 6, 1995 to October 23, 1995, pursuant to Government Code Section 11346.8(c).

An Executive Summary and Technical Support Document (TSD) - including various appendices to the TSD - were prepared for the proposed rulemaking. These documents constitute the Initial Statement of Reasons (ISOR), which was released to the public on August 11, 1995. The ISOR is incorporated herein by reference. On September 21, 1995 the

ARB released three additional documents for inclusion in the administrative record. These documents described additional modifications to the VOC definitions that ARB staff intended to propose at the September 28, 1995 public hearing. The documents contained an analysis of the potential air quality and environmental impacts of the proposed modifications, and the revised wording in strikeout/underline format. Attached to the documents was an explanatory cover letter. The cover letter and the three documents are also incorporated herein by reference.

To insure that these three documents and the cover letter would be widely available, they were mailed on September 21, 1995 to all persons who had been mailed the initial 45-day notice for the rulemaking action. In the cover letter, public comments were invited on the documents and the proposed additional changes to the VOC definitions. Copies of this material were also made available at the September 28, 1995 public hearing, at which the Board approved the proposed modifications that were described in the documents. Finally, the 15-day "Notice of Public Availability of Modified Text and Availability of Additional Documents" mentioned that ARB staff had added these documents to the rulemaking record, and invited additional public comments on this material. As mentioned previously, the 15-day comment period began on October 6, 1995 and ended on October 23, 1995.

This Final Statement of Reasons (FSOR) updates the ISOR by identifying and explaining the modifications that were made to the originally proposed text (i.e., the modifications to the VOC definitions described in the previous two paragraphs). The FSOR also contains a summary of comments received during the rulemaking process and the ARB's responses to these comments.

The Board has determined that this regulatory action will not create costs or savings, as defined in Government Code section 11345.5(a)(6), to any state agency or in federal funding to the state, costs or mandate to any local agency or school district whether or not reimbursable by the state pursuant to Part 7 (commencing with section 17500), Division 4, Title 2 of the Government Code, or other nondiscretionary savings to local agencies.

In preparing the regulatory proposal, the staff considered the potential economic impacts on California business enterprises and individuals from the amendments to the consumer products regulations. Overall, the staff expects the amendments to have beneficial economic impacts as compared to the existing consumer products regulations. Many of these amendments are intended to increase formulating flexibility, and should therefore result in a net cost savings to industry. To the extent that these savings are passed on to consumers, they may also experience a cost savings. Consumers should also benefit from a greater variety of products. Therefore, overall compliance costs will be less than or, at most, equal to the costs to comply with the existing regulations.

The Board has also determined that this regulatory action will not have a significant adverse economic impact on the ability of California businesses to compete with businesses in other states, or on directly affected private persons. In accordance with Government Code section 11346.3, the Board has determined that the amendments should have minor or positive impacts on the creation or elimination of jobs within the state of California, minor or positive impacts on the creation of new businesses and the elimination of existing businesses within

the state of California, and minor or positive impacts on the expansion of businesses currently doing business with the state of California. A detailed assessment of the economic impacts of the proposed regulation can be found in the ISOR.

As explained in the ISOR, it is possible that some individual businesses may be adversely affected by the amendments, even though the overall economic impact of the amendments will be positive. Therefore, the Board has determined that the adoption of the amendments may have a significant adverse impact on some businesses. The Board has also determined, pursuant to Government Code section 11346.5(a)(3)(B), that the regulations will affect small business. The Board has further determined that no alternative was presented or considered which would be more effective in carrying out the purpose for which the amendments were proposed, or which would be as effective and less burdensome to affected persons other than the adopted amendments.

## II. MODIFICATIONS MADE TO THE ANTIPERSPIRANT AND DEODORANT REGULATION, THE CONSUMER PRODUCT REGULATION, AND THE AEROSOL COATINGS REGULATION

Until recently, the VOC definitions in California's consumer products regulations were consistent with the United States Environmental Protection Agency's (U.S. EPA) VOC definition, with the exception of ethane. These three consumer products regulations did not exempt ethane as a VOC, while it was considered exempt under the U.S. EPA's definition. Recently, the U.S. EPA added three additional chemicals to their list of exempt VOCs. These chemicals are the volatile methyl siloxanes (VMS), parachlorobenzotrifluoride (PCBTF), and acetone.

In the August 1, 1995 public hearing notice and in the ISOR the ARB proposed amending the VOC definition in these regulations to exempt the VMS and PCBTF. Because the U.S. EPA had only recently exempted acetone, ARB staff had not yet been able to complete its assessment of the potential environmental impacts—including the air quality impact—of exempting acetone from the VOC definition in the consumer products regulations. The ARB staff completed its assessment of the environmental impacts of exempting both acetone and ethane prior to the September 28, 1995 Board hearing and, as explained previously, on September 21, 1995, the ARB staff released three documents stating that staff planned to propose exemption of acetone and ethane at the September 28, 1995 hearing.

These documents contained an analysis of the potential environmental impacts of the proposed modifications to the VOC definitions. The analysis concluded that the amendments will not have any significant adverse impacts on the environment. In Resolution 95-41, the Board approved the modifications described below:

### A. Antiperspirant and Deodorant Regulation, section 94501

The definition of "Volatile Organic Compound (VOC)" was modified to be consistent with the U.S. EPA's recently amended VOC definition, and the amended VOC definition in the consumer products regulation and the aerosol coatings regulation.

B. Consumer Products Regulation, section 94508(a)(90)

The definition of "Volatile Organic Compound (VOC)" was modified to be consistent with the U.S. EPA's recently amended VOC definition, and the amended VOC definition in the antiperspirant and deodorant regulation and the aerosol coatings regulation.

C. Aerosol Coatings Regulation, section 94521(a)(62)

The definition of "Volatile Organic Compound (VOC)" was modified to be consistent with the U.S. EPA's recently amended VOC definition, and the amended VOC definition in the consumer products regulation and the antiperspirant and deodorant regulation.

III. SUMMARY OF COMMENTS AND AGENCY RESPONSES

The Board received written and oral comments in connection with the September 28, 1995 hearing. The Board also received three comment letters during the subsequent 15-day comment period.

A list of the individuals who commented is set forth in the list below, including the date and form of all comments that were filed in a timely manner. Following the list is a summary of each objection or recommendation made regarding the proposal, together with an explanation of the action taken to accommodate the objection or recommendation, or the reasons for making no change.

List of Commenters:

*45-Day Comments:*

|      |   |
|------|---|
| Deft | Mr. L. Lloyd Haanstra<br>Trade Laboratory Director<br>Deft, Incorporated<br>Written Testimony: August 4, 1995   |
| IRTA | Dr. Katy Wolf<br>Executive Director<br>Institute for Research and Technical Assistance<br>Written Testimony: August 30, 1995  |
| HBD  | Mr. Howard Baker<br>HBaker Development<br>Written Testimony: September 28, 1995   |
| NAA  | George W. Brown<br>Executive Director<br>National Aerosol Association<br>Written Testimony: September 26, 1995  |
| DCC  | Mr. Michael E. Thelen<br>Manager, Regulatory Affairs<br>Dow Corning Corporation<br>Written Testimony: September 28, 1995  |
| CSMA | Mr. Ralph Engel<br>President<br>Chemical Specialties Manufacturers Association<br>Written Testimony: September 28, 1995   |
| CTFA | Mr. James Mattesich and Mr. Thomas J. Donegan, Jr.<br>Cosmetic, Toiletry and Fragrance Association<br>Written Testimony: September 27, 1995<br>Oral Testimony: September 28, 1995 |
| GI   | Mr. Theodore Wernick<br>Gillette, Incorporated<br>Oral Testimony: September 28, 1995  |
| HC   | Mr. Bruce Varner<br>Manager, Government Affairs<br>Helene Curtis<br>Oral Testimony: September 28, 1995  |



*15-Day Comments:*

|      |   |
|------|---|
| DAI  | Mr. Donald G. Shaheen<br>Degesch America, Incorporated<br>Written Testimony: October 3, 1995                                  |
| IRTA | Dr. Katy Wolf<br>Executive Director<br>Institute for Research and Technical Assistance<br>Written Testimony: October 11, 1995 |
| RSC  | Mr. Horst Abramowski<br>Laboratory Director<br>Radiator Specialty Company<br>Written Testimony: October 12, 1995              |

**Comments Received During the 45-day Comment Period:**

1. Comment: We support the exemption of acetone from the VOC definition. This exemption will aid in meeting the January 1, 1996 aerosol coating standards. We still have serious concerns about the December 31, 1999 standards in the aerosol coatings regulation, but understand that there will be a Board hearing prior to the future effective date for the second tier aerosol standards. (Deft)

Agency Response: We agree that the exemption of acetone will aid in manufacturers' efforts to reformulate their aerosol coatings to meet the 1996 standards. In regard to the 1999 future effective standards, as the commenter indicated, the aerosol coatings regulation requires the Board to hold a public hearing prior to December 31, 1998 to review the commercial and technological feasibility of the 1999 standards.

2. Comment: Because of their potential toxicity, the exemption of two classes of chemicals, the monochlorotoluene/benzotrifluorides and the volatile methyl siloxanes (VMS), may have severe consequences if proper controls are not in place. We request that exemption of these two classes be delayed until they have been put through the AB 1807 process and are properly controlled. (IRTA)

Agency Response: We would first like to clarify the compounds that have been exempted. The ARB is not exempting an entire class of monochlorotoluene/benzotrifluorides, as stated by the commenter. Rather, the ARB has exempted only one compound in that class, parachlorobenzotrifluoride (PCBTF). We have exempted all cyclic, branched, or linear, completely methylated siloxanes.

PCBTF has not been listed by the State of California under Proposition 65 as a reproductive toxicant or a carcinogen, has not been identified by the ARB as a Toxic Air Contaminant under AB 1807 (see Title 17, CCR, section 93000), and has not been listed under AB 2588 Air Toxics "Hot Spots" program (see Title 17, CCR, sections 93300-93355 (Appendix A)). As described in the ISOR, after testing carried out under the Toxic

Substances Control Act, the U.S. EPA has issued a decision to not to require further testing of PCBTf [also known as 4-chlorobenzotrifluoride] for health effects, environmental effects, and chemical fate. In regard to the VMSs, during evaluation by the U.S. EPA of these chemicals, they received data showing that the VMSs are "generally nontoxic to humans and the environment...[and]...are presently used in personal care products and other consumer products." Our own research has shown them to be used in many consumer products such as hairsprays, makeup, and conditioners. Like PBCTf, they have not been listed by the State of California under Proposition 65 as reproductive toxicants or carcinogens, and have not been identified by the ARB as Toxic Air Contaminants under AB 1807 or listed under the AB 2588 Air Toxics "Hot Spots" program. The Office of Environmental Health Hazard Assessment concluded that no assessment of toxicity was possible, although they pointed out that the immunotoxicity of the materials may warrant further study.

In summary, the ARB staff has reviewed the available literature and has found that, although there are gaps in knowledge regarding the toxicity and carcinogenicity of these chemicals, the amount and type of information available on these chemicals are similar to many other compounds that are presently in widespread use. We therefore do not believe that there is a sufficient amount of information available to warrant excluding these chemicals from a list of exempt VOCs. If additional information does become available, if warranted, we will review them through our AB 1807 and AB 2588 program. Additionally, as noted previously, the U.S. EPA has conducted their own analysis of potential adverse impacts regarding the exemption of these compounds from their VOC definition, and has found that it is appropriate to exempt them from their VOC definition.

3. Comment: There was not sufficient time to comment on the proposed changes to the consumer products regulations. An onerous burden is placed on companies when they are required to travel long distances to comment on proposed regulations. Your procedures should include a reasonable amount of time for publication and comment on proposed regulations. (HBD)

Agency Response: The ARB already has procedures in place which allow sufficient time for public comment on proposed regulations; these are the notice and comment procedures specified in the Administrative Procedure Act. In this rulemaking action the ARB carefully followed these procedures. As explained earlier in this Final Statement of Reasons, a 45-day public notice period was provided prior to the Board hearing, and a 15-day comment period was also provided after the Board hearing. We believe that these comment periods provided sufficient time for the public to comment on the proposed amendments. In addition, even more time to comment was provided prior to the start of the formal 45-day comment period. An initial draft of the proposed amendments was made available to the public and was discussed at an informal workshop held April 12, 1995. Notices for the workshop were sent to antiperspirant and deodorant manufacturers, local air districts, environmental groups, and industry trade organizations. Finally, it is not necessary for interested persons to incur the time and expense to physically attend the Board hearing. The ARB accepts and considers written comments (received by mail or facsimile) and comments submitted by telephone, in addition to oral comments presented at the Board hearing.

4. Comment: We support the proposed exemption of acetone from the VOC definition in the consumer products regulations. We also support the extension of the ethanol exemption to all antiperspirant and deodorant manufacturers. (NAA)
5. Comment: We support the proposed amendments to the antiperspirant and deodorant regulation as well as the proposed changes to all of the consumer products regulations, including the exemption of the volatile methyl siloxanes, parachlorobenzotrifluoride, acetone, and ethane from the VOC definition in these regulations. (CSMA)
6. Comment: We support the proposed amendments to the antiperspirant and deodorant regulation and supports the Board's action to exempt acetone from the VOC definition in the consumer products regulations. (CTFA)
7. Comment: Dow Corning Corporation supports the exemption of VMSs from the VOC definition in the consumer products regulations. (DCC)
8. Comment: We support the proposed amendments to the antiperspirant and deodorant regulation. (HC)
9. Comment: Supports the proposed amendments to the antiperspirant and deodorant regulation and the proposed exemption of acetone and the VMSs from the VOC definition in the consumer products regulations. (GI)

Agency Response:

In response to comments four through nine, staff acknowledges the support and agrees with the comments.

10. Comment: We request that you expedite submittal of this rulemaking package to the Office of Administrative Law (OAL), because consumer products manufacturers are waiting to use these amendments and get new products into the marketplace. (CTFA)

Agency Response: ARB staff will work to complete the package as quickly as possible. When the package is submitted to OAL for approval, staff will request an early effective date for the amendments.

11. Comment: The 1999 zero percent HVOC limits for aerosol antiperspirants and deodorants are not technologically and commercially feasible, and any manufacturer required to meet those limits is effectively banned from the marketplace. The ARB staff proposal recognizes this by moving the zero percent HVOC compliance date from January 1, 1995 to January 1, 1999, and by allowing any manufacturer to enter into the aerosol manufacturer's compliance plan. (CTFA)

Agency Response: ARB staff does not agree with the commenter's statements. The rationale and technical basis for the antiperspirant and deodorant amendments is explained in detail in Chapters III and IV of the ISOR (Volume II, Technical Support Document, pages 15-23)

#### **15-day Period Comments and Agency Responses:**

12. Comment:

Ammonium bicarbonate and ammonium carbamate should be added to the list of compounds that are exempt from the definition of VOC in the consumer products regulations. This is because, upon volatilization, these compounds release ammonia and carbon dioxide (which are not VOCs) into the atmosphere. Additionally, the VOC definition should include a lower vapor pressure limit, as, like the federal VOC regulation, the VOC definition appears to include polyethylene and other non-volatile polymers such as dried glues, paraffin, and, potentially, diamonds, graphite, and other non-volatile, carbonaceous substances. (DAI)

Agency Response:

Should the U.S. EPA exempt ammonium bicarbonate and ammonium carbamate from their VOC definition, the ARB would consider exempting them from the VOC definitions in the consumer products regulations. At this time, we have insufficient information regarding the chemistry of these chemicals and their breakdown products to exempt them from the VOC definition. In regard to the commenters suggestion that the ARB set a lower limit for volatility in the VOC definition, the ARB consumer products regulations include a volatility limit below which materials are exempted from the Table of Standards. The consumer products regulation, in section 94510(d), states that the requirements in the Table of Standards will not apply to those VOCs which have a vapor pressure of less than 0.1 mm Hg at 20°C or consist of more than 12 carbon atoms, if the vapor pressure is unknown. The antiperspirant and deodorant regulation states, in section 94503(c), that the requirements in the table of standards shall not apply to VOCs with a vapor pressure of 2 mm Hg or less at 20°C or VOCs with more than 10 carbon atoms, when the vapor pressure is unknown. The aerosol coatings regulation relies upon test methods to determine VOC content and exclude those solvents that are exempt from the standards, rather than specifying a specific vapor pressure cut-off. In any case, it is likely that many, if not most, of the materials mentioned in the comment, such as diamonds, graphite, and other non-volatile substances, would not be considered VOCs under the consumer products regulations.

In summary, the consumer products regulations, as currently structured, do effectively exclude non-volatile, carbon-containing compounds, such as several of those listed by the commenter, from those compounds considered VOCs under the Table of Standards. However, we believe that our current approach is superior to that described by the commenter, as it maintains consistency with the U.S. EPA's approach.

13. Comment:

We support the exemption of acetone from the VOC definition in the consumer products regulations. However, we suggest that acetone emissions be tracked to monitor usage changes in response to this exemption, and that a retrospective study be conducted within eighteen months of the exemption to fully assess its consequences. It is possible that a large increase in total acetone emissions could lead to increased ozone formation. (IRTA)

Agency Response:

Staff agrees that emissions of acetone should be monitored in response to this exemption. The ARB staff will evaluate strategies to best accomplish this objective. A detailed study will be conducted, as requested by the commenter, if developments over the next year convince ARB staff that such a study is warranted.

14. Comment: It is requested that the final language would include the three additional solvents as not meeting the VOC definition. Because the U.S. EPA exempted these, does this mean Title 17, California Code of Regulations will also exclude from the definition of VOC? Title 17 uses "excluding," U.S. EPA uses "exempted." Theoretically you are excluding an exempted, henceforth, it would be voided. (RSC)

Agency response: The commenter's point in these comments is not clear. The commenter may be concerned that the proposed modifications to the VOC definitions in Title 17, CCR, will not result in the exemption of acetone, ethane, and PCBTF from the VOC definition under the ARB consumer products regulations, and that they will continue to be considered VOCs. Assuming that this is the commenter's concern, we can categorically state that excluding these compounds from those considered VOCs is both the ARB's intent and the legal effect of the modifications. Therefore, as a result of these modifications, acetone, ethane, and VMS will not be considered VOCs and will, as such, not be included in any calculation of VOC content for the purpose of determining compliance with the consumer products regulations. It is also possible that the commenter is concerned that the language of the definitions could have been drafted more clearly. Given the complexity of the subject matter, we believe that the language is as clear as we know how to make it. The VOC definition has already been revised several times since the consumer product regulations were first adopted, and the current language represents the ARB's efforts to improve on the earlier versions. The language was drafted in consultation with the consumer products industry and is widely supported. Additional discussion of the wording of the VOC definition can be found in the documents released by ARB staff on September 21, 1995 which have been referred to previously and are a part of the public record. The cover letter to these documents indicated that staff planned to propose exemption of acetone and ethane at the September 28, 1995 hearing and, in Enclosure 1, entitled "Environmental Impacts of the Proposed VOC Exemptions for Acetone and Ethane" the reason for the modified structure of the VOC definition was explained in further detail.

15. Comment: Why does all of the same language in the VOC definition have to be repeated for section 94501, section 94508, and section 94521. This appears to be a waste of time and effort, and additional paper is needed. (RSC)

Agency response: It is necessary to cite the VOC definition in three separate sections because the VOC definition is included separately in each of the three consumer products regulations: the antiperspirant and deodorant regulation, the consumer products regulation, and the aerosol coatings regulation.